



Fabricating Brain Tissue by growing Stem Cells on Coral Skeletons

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Condition: New. Publisher/Verlag: VDM Verlag Dr. Müller | Stem cells convert into neurons and glia when cultivated on three-dimensional aragonite crystalline matrix | The brain has a limited ability to recover from injury; however, the discovery of stem cells that can differentiate into neural cells neurons and glia -creates conditions for generation of new cells to replace the damaged tissue. We have developed a method to facilitate achievement of this long-sought-after goal - cultivating stem cells on coral skeleton adjacent to cultures of primary neural cells. The coralline skeleton is a highly adhesive porous scaffold made of crystalline aragonite and is unique in its ability to nurture cells with calcium. Growing stem cells on this scaffold in close proximity to a layer of neural cells enhances these cells' durability and differentiation to neural lineages. The enhancement is due to the combination of growth of the stem cells in three-dimensions, their chemical interaction with the aragonite crystals and their reaction to inducing factors secreted by the primary neural cells. This novel nervous tissue engineering strategy can significantly contribute to our capability to promote regeneration in the central nervous system following trauma, stroke and neurodegenerative diseases. | Format: Paperback | Language/Sprache: english | 60 pp.



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